Clinical Case Registries Version 1.0 Reference Guide

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V*IST*A System Design & Development

Revision History

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Preface

The Clinical Case Registries Reference Guide provides recommendations regarding troubleshooting the VistA part of the Clinical Case Registries software (CCR). This document is targeted for Information Resources Management (IRM) and Enterprise VistA Support (EVS) staff.

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1. Orientation

1.1. How to Use this Manual

Sometimes, throughout this manual, you are shown a simulation of your interaction with the computer. In order to distinguish computer-supplied prompts from your responses, the responses will be in bold type, like this:

```
COMPUTER'S PROMPT: USER'S RESPONSE
```

The Return or Enter key is shown as **<RET>**.

The online version of the manual contains cross-references (highlighted with blue color). You can move to the corresponding location in the document by clicking on the highlighted text.

1.2. Assumptions About the Reader

This manual is written with the assumption that the reader is familiar with the VistA computing environment (FileMan and HL7 in particular).

1.3. Related Manuals

- Clinical Case Registries Installation/Implementation Guide
- Kernel Systems Manual
- VA FileMan Programmer Manual
- VistA HL7 Manuals

Orientation

2. HL7 Troubleshooting

The Clinical Case Registries software exchanges data with the AAC (Austin Automation Center) using the HL7 protocol. The whole process consists of two HL7 transactions and looks like this:

- Site opens a TCP/IP connection to the AAC. See Table 1 for the HL7 parameters used by the registries.
- Site sends a batch HL7 message to the AAC.
- AAC sends a commit acknowledgement back (through the same connection).
- The site closes the connection.
- AAC processes the message.
- AAC adds the "HL7." prefix to the site domain name extracted from the HL7 message and resolves the resulting name to the IP address.
- AAC opens a TCP/IP connection to the site (IP: result of the previous step, Port: 5000).
- AAC sends an application acknowledgement to the site.
- Site sends a commit acknowledgement back (through the same connection).
- AAC closes the connection.

Table 1: HL7 Parameters

Registry Name	Protocol	HL7 Logical Link	IP Address	Port
VA HEPC	ROR-SITE-DRIVER	ROR SEND	10.224.187.9	7000
VA ICR	RORICR-SITE-DRIVER	RORICR SND	10.224.187.7	7001

The algorithm of HL7 message processing by the nightly task (the [ROR TASK] option) is illustrated in Figure 1 (see also the comments in Table 2).

2.1. Common HL7 problems

The HL7 problems in the Clinical Case Registries package usually have one of the following reasons:

- The original HL7 messages cannot be transmitted to the AAC.

  o The registry HL7 logical link is not started at the site.
  o The e*Gate software at the AAC is down and does not accept TCP/IP connections.
  o Something is wrong with the network.

- The application acknowledgements cannot be transmitted to the site.

  o The AAC software is down and does not send the acknowledgements.
  o The site does not accept TCP/IP connections on port 5000 (the default HL7 listener is not started or is not working properly).
  o Something is wrong with the DNS (Domain Name Service) server and the AAC software cannot resolve the HL7 domain name extracted from the original message into the IP address.
  o A wrong IP address is associated with the HL7 domain name. The HL7 domain name should be associated with the IP address(es) at which the VistA HL7 engine accepts the transmissions on port 5000.
  o Something is wrong with the network.

☞ The registry is not updated and the data is not extracted until the last HL7 message is acknowledged by the AAC.

Figure 1: HL7 Message Processing
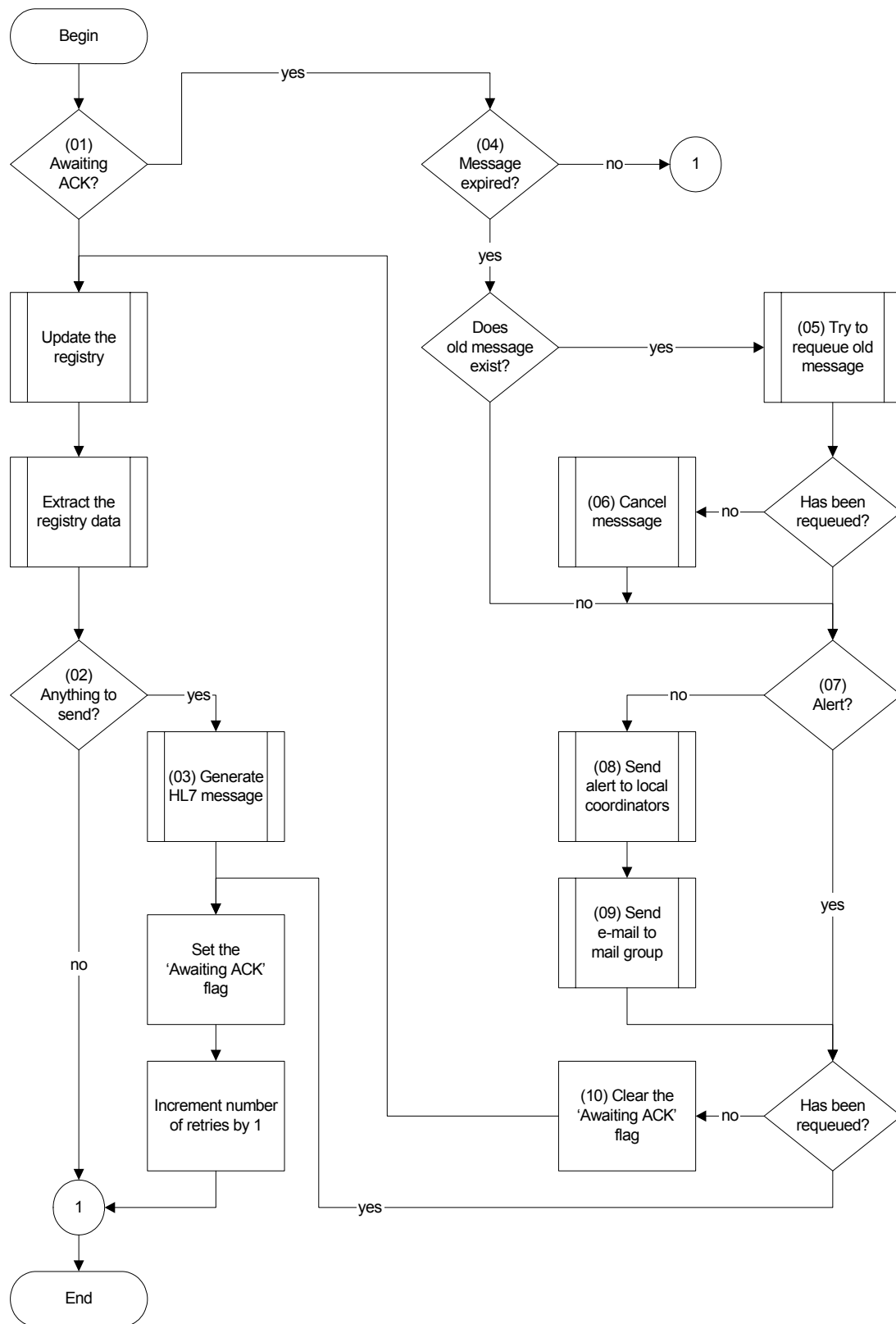
Table 2: Comments to the HL7 Message Processing

#	Comment
01	The nightly task checks if the application acknowledgement for the last HL7 message has been received.
02	If no new data is available, no HL7 message is sent to the AAC.
03	If the last HL7 message was cancelled then the new one will contain both the data from the previous message and the new data.
04	If number of days since the last attempt to (re)send the HL7 message is less than the value of the DAYS TO WAIT FOR ACK field (15.9) of the ROR REGISTRY PARAMETERS file (#798.1), the software continues waiting for the acknowledgement. Otherwise, the message is considered expired.
05	If the last HL7 message still exists (usually, this is true), the software tries to re-queue the message so that it will be resent to the AAC. The "The HL7 message #… has been re-queued [-93]" information message is recorded after successful re-queuing.
06	If the attempt to re-queue the HL7 message fails, the message is cancelled and the "The HL7 message #… has been canceled [-94]" warning is recorded into the log.
07	If the remainder from division of the number of attempts to (re)send the message by the value of the NUMBER OF RETRIES FOR ALERT field (13.2) is equal to 0 then the coordinators and members of the mail group are notified about the problem. For example, if NUMBER OF RETRIES FOR ALERT has a value of 2 (by default) then the alert and notification will be sent after every other attempt to re-queue the message.
08	The nightly task records the "No application ACK after … attempt(s) to resend message [-67]" message and sends it as a VistA alert to the registry coordinators.
09	If the NATIONAL NOTIFICATION E-MAIL field (13.3) of the ROR REGISTRY PARAMETERS file has a value (by default, "CCRAutoNotification@med.va.gov"), the notification e-mail is sent to that address. The e-mail has a predefined subject line and contains description of the problem and information about the HL7 message in XML format (see Figure 2 for an example).
10	If the attempt to re-queue the last HL7 message has been unsuccessful, the software resets the 'Awaiting ACK' flag so that the data extraction task will generate a new HL7 message. Otherwise, the date of last attempt is updated and the counter of retries is incremented.
*	The number of retries and the 'Awaiting ACK' flag are reset after the application acknowledgement is received and successfully processed.

Figure 2: Example of Notification E-mail Message

```
Subj: ROR: HL7 PROBLEM
From: <POSTMASTER@DEV.DEV.FO-HINES.MED.VA.GOV>
--------------------------------------------------------------------------------
<?xml version="1.0"?>
<HL7_PROBLEM>
  <DESCRIPTION>
    The application acknowledgement for the HL7 message #4993674868
    (generated by the 'VA ICR') has not been received by
    the 'SUPPORT ISC' after several attempt(s) to resend the message.
    Please coordinate actions of the site and the Austin Automation
    Center (AAC) and fix the problem as soon as possible.
  </DESCRIPTION>
  <STATION>
    <NUMBER>499</NUMBER>
    <NAME>SUPPORT ISC</NAME>
  </STATION>
  <REGISTRY>VA ICR</REGISTRY>
  <MESSAGE_STATUS>
    <DESCRIPTION>
      Message ID....... 4993674868
      Message status... Error
      Status updated... Apr 21, 2003@10:48:33
      Error message.... Invalid Receiving Application
      Error type....... Message was NAK'ed
      # of retries..... 1
      Queue position...
      # Open failed.... 1
      ACK timeout......
    </DESCRIPTION>
    <MSGID>4993674868</MSGID>
    <STATUS>Error</STATUS>
    <STATUS_CODE>4</STATUS_CODE>
    <STATUS_UPDATED>20030421104833-0600</STATUS_UPDATED>
    <ERRMSG>Invalid Receiving Application</ERRMSG>
    <ERRTYPE>Message was NAK'ed</ERRTYPE>
    <RETRIES>1</RETRIES>
    <QPOS></QPOS>
    <OPENFAIL>1</OPENFAIL>
    <ACKTO></ACKTO>
  </MESSAGE_STATUS>
</HL7_PROBLEM>
```

2.2. Troubleshooting steps

Below are the steps that may help you to troubleshoot data transmission problems:

☞ The Hep C registry (VA HEPC) will be used in the following examples.

1. First, you should check the status of the HL7 logical link. If it is shut down for some reason, start it (HL7 Main Menu → Filer and Link Management Options → Start/Stop Links). If the link is in the "Openfail" state, restart it (stop and start again) just in case.

2. Please make sure that the AUTOSTART parameter of the HL7 logical link is set to Enabled (HL7 Main Menu → Filer and Link Management Options → Link Edit).

3. Then check if the messages are actually transmitted to the AAC (HL7 Main Menu → Message Management Options → View Transmission Log (TCP only) → Message Search).

```
Enter a date and optional time: T// T-3

Enter a date and optional time: NOW// <RET>

Select Status Code for Report:  ALL// <RET>

Select Logical Link for Report:  ALL// ROR SEND

Select Message Type for Report:  ALL// <RET>

Select Event Type for Report:  ALL// <RET>

 . . . PLEASE WAIT, THIS CAN TAKE AWHILE . . .
```

If you see something like the screen shot below:

```
MESSAGE ID #           D/T Entered   Log Link   Msg:Evn IO Sndg Apl Rcvr Apl
6128099200             082702.021115  ROR SEND   ACK:C09 OT ROR SITE ROR AAC
6128099223             082702.035835  ROR SEND   ACK:    IN
6128177330             082902.0227    ROR SEND   ACK:C09 OT ROR SITE ROR AAC
6128177367             082902.040714  ROR SEND   ACK:    IN
6128214982             083002.022316  ROR SEND   ACK:C09 OT ROR SITE ROR AAC
6128214983             083002.040741  ROR SEND   ACK:    IN



HYPER-TXT|<PF1>H=Help <PF1>E=Exit| Line>     6 of 6      Screen>     1 of 1
```

then the messages are actually transmitted to the AAC. The messages 6128099200, 6128177330, and 6128214982 are the outgoing messages generated by the ROR package. The messages 6128099223, 6128177367, and 6128214983 are the corresponding commit acknowledgements received from the AAC.

If the screen shot looks like this:

```
MESSAGE ID #           D/T Entered   Log Link   Msg:Evn IO Sndg Apl Rcvr Apl
6128099200             082702.021115  ROR SEND   ACK:C09 OT ROR SITE ROR AAC
6128177330             082902.0227    ROR SEND   ACK:C09 OT ROR SITE ROR AAC
6128214982             083002.022316  ROR SEND   ACK:C09 OT ROR SITE ROR AAC



HYPER-TXT|<PF1>H=Help <PF1>E=Exit| Line>     6 of 6      Screen>     1 of 1
```

then either there is a problem with the HL7 logical link at your site or the AAC server was down all those days (quite unlikely). You should check the state of the link and contact the AAC if you are sure that everything is correct at your end.

The following screen shot illustrates another problem:

```
MESSAGE ID #           D/T Entered   Log Link   Msg:Evn IO Sndg Apl Rcvr Apl
6128099200             082702.021115  ROR SEND   ACK:C09 OT ROR SITE ROR AAC
6128099223             082702.035835  ROR SEND   ACK:    IN
6128099224             082702.041530  ROR SEND   ACK:    IN
6128099227             082702.043025  ROR SEND   ACK:    IN
6128099230             082702.044447  ROR SEND   ACK:    IN
6128099232             082702.050015  ROR SEND   ACK:    IN
6128099235             082702.051512  ROR SEND   ACK:    IN
6128099240             082702.053102  ROR SEND   ACK:    IN
...

HYPER-TXT|<PF1>H=Help <PF1>E=Exit| Line>     6 of 6      Screen>     1 of 1
```

Message 6128099200 cannot be transmitted to the AAC due to the timeouts in the e*Gate software. The timeouts may be caused by large message size. The VistA HL7 engine tries to send the message but receives an invalid commit acknowledgement every time the AAC software

times out. Note that the body of these incoming messages usually contains the "N23" string. It is quite unlikely that you will ever see this problem since the patch ROR*1*2 limits maximum size of the message to 5 megabytes.

4. Let us assume that the HL7 messages are successfully transmitted to the AAC. The next step is to make sure that the messages are not rejected during the transmissions.

If the list of the messages and commit acknowledgements is not on the screen, open it as described earlier. Then press the **Tab** key until the message ID of the last outgoing message (6128214982 in our example) is underlined. Press the <right arrow> key to open the message:

```
                            MESSAGE
Record #: 8214982           Message #: 6128214982
D/T Entered: 083002.022316  D/T Processed: 083002.04081
Logical Link: ROR SEND      Ack To MSG#: 6128214982
D/T STATUS: 083002.04081    STATUS: SUCCESSFULLY COMPLETED
ERR MSG:                    ERR TYPE:
Sending Appl: ROR SITE
Receiving Appl: ROR AAC
Message Type: ACK           Event Type: C09
MESSAGE HEADER:
BHS|^~\&|ROR SITE|station number^domain name^DNS|ROR AAC||20020830022316
MESSAGE TEXT:
MSH|^~\&|ROR SITE|||||||CSU^C09^CSU_C09|61229580531-1||2.3.1|||AL|AL|US
PID||...
CSR|VA HEPC^VA||...
CSP|0^Edit^99VA7983|20020301223446-0700
CSS|O^ONE TIME ONLY^L|20020829


...

HYPER-TXT|<PF1>H=Help <PF1>E=Exit| Line>    22 of 2965   Screen>     1 of 135
```

Notice the fields highlighted with red color (in this document only). If the STATUS is SUCCESSFULLY COMPLETED and both the ERR MSG and the ERR TYPE fields are empty, then the application acknowledgement has finally been received. Otherwise, consult the HL7 documentation regarding the values of the ERR MSG and ERR TYPE fields.

The "Cancelled by application" value of the ERR MSG field usually means that the ROR software had given up on waiting for the application acknowledgement, cancelled this message, and generated a new one.

The HL7 error messages are somewhat confusing. If you are not able to decipher them, submit a Help Desk request (NOIS/Remedy). Please provide the screen shot of the message in question.

5. Make sure that the HL7 domain name is resolved into the correct IP address:

o Get the site domain name from the 4th field of the BHS segment (bold-faced in the previous screen shot) in the original HL7 message. Append the "HL7." prefix and write down the resulting name. For example, the HL7 domain name for Dallas is HL7.DALLAS.MED.VA.GOV.
o Logon to any Windows NT or Windows 2000 workstation connected to the VA intranet.
o Open the Command Prompt window (Start → Programs → Accessories → Command Prompt).
o Enter the NSLOOKUP command followed by the HL7 domain name. For example:

```
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\>NSLOOKUP HL7.DALLAS.MED.VA.GOV
Server:  vhaish3dc1.vha.med.va.gov
Address:  10.3.21.192

Name:    HL7.DALLAS.MED.VA.GOV
Address:  10.138.65.4

C:\>
```

- o Write down the IP address(es) associated with the HL7 domain name of your site (the single 10.138.65.4 address in the above example).
- o Make sure that the default VistA HL7 listener on port 5000 is started and working properly on all nodes with these IP addresses.

6. Try to open a Telnet connection to the e*Gate port to make sure that it is working.

- o Get the IP address and port number of the AAC server from the definition of the HL7 logical link (HL7 Main Menu → Filer and Link Management Options → Link Edit). Move to the LLP TYPE field and press <RET> to open the pop-up window with the link parameters).
- o Logon to any Windows NT or Windows 2000 workstation connected to the VA intranet.
- o Open the Command Prompt window (Start → Programs → Accessories → Command Prompt).
- o Enter the TELNET command followed by the AAC server IP address and the port number. For example:

```
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\>TELNET 10.224.187.9 7000
Connecting To 10.224.187.9...Could not open a connection to host on port 7000 :
Connect failed

C:\>
```

- o If you see the "Could not open a connection…" message illustrated above, then either the AAC server does not accept the TCP/IP connections or something is wrong with the network. You should either create a Help Desk request (NOIS/Remedy) or contact the network support personnel and the AAC directly.
- o If you see an empty screen, then the server is probably accepting connections but this does not guarantee that it is handling them properly.
- o Press the **Ctrl** and **]** keys at the same time and then enter the QUIT command to close the connection:

```
Microsoft (R) Windows 2000 (TM) Version 5.00 (Build 2195)
Welcome to Microsoft Telnet Client
Telnet Client Build 5.00.99203.1

Escape Character is 'CTRL+]'

Microsoft Telnet> QUIT

C:\>
```

       o   Close the Command Prompt window.

7. If you cannot isolate the problem or do not know how to resolve it, submit a Help Desk request (NOIS/Remedy) and communicate the problem to your sysadmin or network support personnel.

3. Frequently Asked Questions (FAQ)

3.1. Activity Log

Q1.   What does the "Error code '-1' is returned by the '$$GETICN^MPIF001'", "NO ICN NODE" message mean?

The patient referenced by this message has no ICN (Integration Control Number). You can ignore this message since this is only a data quality warning. However, it would be a good idea to assign a valid ICN to this patient anyway.

Q2.   What does the "Cannot obtain results of the Lab tests" error mean?

This message in the log usually looks like this:

```
Cannot obtain results of the Lab tests
Invalid patient identifier passed
No patient found with requested identifier
Location: LABRSLTS^RORUTL02
```

It means that the Lab API was not able to identify the patient using his/her SSN or ICN. The cause of the problem is that the patient has neither valid SSN nor valid ICN. Valid SSN, ICN or both should be assigned to the patient to fix the problem. Local ICNs (they have 9 digits instead of 10) also cause this error.

There could be another variation of the message:

```
Cannot obtain results of the Lab tests
No patient found with requested identifier
Location: LABRSLTS^RORUTL02
```

It means that the patient has SSN and/or ICN but there are no appropriate entries in the corresponding cross-references. You should check if the "SSN" and "AICN" cross-references of the PATIENT file (#2) have corresponding references to the patient record.

Q3.   What should I do about the errors related to the LOST, PT and ZZ patients?

You should ignore them. These records in the PATIENT file mean that the information about the patients was somehow lost in the past. The records are left in the file only to avoid dangling pointers and to reserve the IENs (DFNs).

The package will record errors for these "patients" in the logs for some time (about 2 weeks), after which they will be completely ignored by the software.

Q4.   There was an error being recorded for a patient for a while. After two weeks I have finally found some time to fix the error but it is not recorded anymore. What happened?

It is possible that someone else has fixed the error. However, this is rather unlikely. ☺

Most probably, the error counter has reached the threshold and the search engine ignores the patient. This applies only to the errors recorded during the registry update (the REGISTRY UPDATE section of the log). Let us shed some light on this hidden process.

When the search engine discovers a severe error associated with a patient during the registry update, it records an error in the log and increases the value of the COUNTER field (2) of the registry record(s) in the ERROR multiple (1) of the patient record in the ROR PENDING PATIENT file (#798.3).

As soon as the value reaches the threshold (it is 14 now), the search engine will skip the patient until someone fixes the error and resets the COUNTER to 1 by using FileMan).

After the counter is reset, the next registry update will process the patient data again using the date from the record of the ERROR multiple as the start date for the data search (instead of the value of the REGISTRY UPDATED UNTIL field of the ROR REGISTRY PARAMETERS file). If there are no more errors for this patient, the record(s) will be deleted from the ERROR multiple.

This approach relieves you from repetitive errors that are not related to any registry and will not be fixed anyway. However, it causes a potential problem as well. If the patient whose error counter has reached the threshold gets positive result(s) or ICD-9 code(s), he/she will not be added to the registry automatically (the patient is completely ignored by the search engine). It would be a good idea to review the logs on a regular basis and fix the errors. This will improve the overall data quality as well.

The menu option (Clinical Case Registries Maintenance menu [RORMNT MAIN] → Pending Patients → List of Pending Errors) was distributed by the patch ROR*1*2. This option prints a list of patients who have error references in the ROR PENDING PATIENT file. The output is grouped by the values of the COUNTER field. Thus you can determine which patients are already ignored by the software or will soon be ignored.

3.2. Clinical Case Registries GUI (CCR GUI)

Q5.   Why is the number of registry patients displayed in the Registry Information dialog box of the CCR GUI not updated when I add a new patient?

The Number of Patients and Number of Active Patients fields show the corresponding values as they were right after the last registry update. The fields are updated by the nightly task (the [ROR TASK] option).

Q6.   I have just assigned a registry security key to the user. Why is the user still not able to open the registry in the CCR GUI?

Assignments of the ROR security keys (except the ROR VA IRM) will have an effect only after the nightly task re-indexes the "ACL" cross-reference of the ROR REGISTRY PARAMETERS file (#798.1). If you do not want to wait, you can re-index the cross-reference manually using the Re-index the ACL cross-reference option of the Clinical Case Registries Maintenance [RORMNT MAIN] menu.

Q7.   Will the Hep C registry interface be added to the new CCR GUI?

Probably, yes. It is anticipated that a subsequent patch will add the Hep C functionality to the GUI and enable the registry selection dialog box to be opened by the Open Registry option of the File menu.

Q8.   Why is the date displayed in the "Extracted until" field on the "Registry" tab always several days behind the "Last Data Extraction" date from the "Registry Information" dialog box?

The number of lag days defined by the registry parameters (currently, 2 days for Hep C and 7 days for ICR) is subtracted from the current date and the resulting date is used as the end date for the nightly data extraction. Every subsequent data extraction starts from the end date of the previous one. The delay increases the chances of the data entered retrospectively not to be missed by the data extraction process.

When a patient is inactive (or in "pending" status), his/her data is not transmitted to the AAC. Therefore, the "Extracted until" and "Acknowledged until" fields are not updated as well.

3.3. Data Search

Q9.   Is the string comparison (the 'Equal To', 'Contains', and Positive Result indicators) in the Lab search criteria case sensitive?

No. For example, you do not need to enter "POS", "pos" and "Pos" indicated values; the "POS" is enough.

Q10. What is wrong with the 'Contains P' and 'Contains REACT' lab search indicators?

Everything!

The value of a Lab result sometimes is equal to "pending". So, these results will be incorrectly considered positive if you use the 'Contains P' search indicator! If you want to check for "P", "POS" and "POSITIVE" values, use both 'Equal To P' and 'Contains POS' indicators.

The 'Contains REACT' will incorrectly select the patients whose Lab results contain "NONREACT" or "NONREACTIVE"! If you want to check for "REACT" and "REACTIVE" values, use both 'Equal To REACT' and 'Equal To REACTIVE' indicators.

Q11. Why are the patients who have positive Lab results not added to the registry?

You may not have entered correct and/or all necessary LOINC codes, indicators or indicated values into the Lab search criteria definition. Another reason for this could be that some errors prevent loading patient Lab results (see also Q2 and Q4).

3.4. Historical Data Extraction

Q12. Why does the Display Task Log option of the [RORHDT MAIN] menu not show the log for a historical data extraction task?

The log is created only when the historical data extraction task starts. For example, if the task is scheduled to run at 5pm, there will be no log for this task until 5pm.

3.5. Nightly Task and HL7

Q13. Should I start the HL7 logical link in the test account?

No. You <u>must not</u> start the HL7 link! The data from the test account <u>must not</u> be sent to the AAC.

Q14. Can I schedule the nightly task (the [ROR TASK] option) in the test account?

Yes, you can schedule the [ROR TASK] option if you want to. However, it will update the registry only once because there will be no application acknowledgement for the HL7 message. The nightly task will wait for it indefinitely unless you reset the Awaiting ACK flag manually (Clinical Registry Maintenance Menu [RORMNT MAIN] → Edit 'Awaiting ACK' flag).

Q15. Can I schedule the nightly task (the [ROR TASK] option) before the historical data extraction is completed?

Yes, you should do so. The [ROR TASK] option should be scheduled as soon as the registry is populated and verified. The nightly task and historical data extraction are independent processes. You should schedule the task and proceed with the historical data extraction.

Q16. Why am I getting the "<UNDEFINED>TASK+13^ROR…" error?

You have forgotten to enter the registry name(s) into the TASK PARAMETERS field while scheduling the nightly task (the [ROR TASK] option).

Q17. Should I enter the "E" value for the RORFLCLR parameter during scheduling the [ROR TASK] option?

No, you should not unless you are told to do so! This parameter is intended for troubleshooting and some special cases.

Q18. **I defined the RORSUSP parameter during scheduling the nightly task. However, I still see the ROR TASK in the list of active tasks during the peak hours. What is wrong?**

Nothing. The task checks hourly for a stop request and then suspends itself for another hour (using the HANG command with 3600 as an argument). Therefore, the task consumes a negligible amount of CPU resources and almost no physical memory (the task image is unloaded into the swap file).

3.6. Registry Parameters

Q19. **Where are the LOINC codes stored, i.e., those that are used by the data extraction process? Can I modify the list?**

The LOINC codes are stored in the EXTRACTED RESULT multiple (12) of the ROR REGISTRY PARAMETERS file (#798.1). <u>You must not modify the list for the national registries (Hepatitis C registry, Immunology Case Registry, etc.)</u>! The Clinical Case Registries patches update this list if necessary.

Q20. **Where are the drug codes stored, i.e., those that are used in the Hep C Drug Therapy Report? Can I modify the list?**

The national drug codes are stored in the DRUG THERAPY LIST multiple (17) of the ROR REGISTRY PARAMETERS file (#798.1). <u>You must not modify the list for the national registries (Hep C, ICR, etc)</u>! The Clinical Case Registries patches update this list if necessary.

Q21. **Where are the generic antiretroviral (ARV) drugs stored, i.e., those that are used in the ICR reports? Can I modify the list?**

The generic ARV drugs are stored in the ROR GENERIC DRUG file (#799.51). <u>You must not modify the list for the national registries (e.g. ICR)</u>! The Clinical Case Registries patches update this list if necessary.

However, you can edit the list of local ARV drugs using the **ARV Drugs** tab of the **Site Parameters** dialog box in the CCR GUI. Those drugs are stored in the LOCAL DRUG NAME multiple (29) of the ROR REGISTRY PARAMETERS file (#798.1).

Q22. **Why does the HDT END DATE field in the registry parameters have no value? Should I enter something there?**

This field is populated automatically after successful creation of the registry by the Registry Setup [ROR SETUP] option. You must run this option first and wait for completion of the registry setup task before proceeding with the historical data extraction.

4. Messages

The error messages are grouped by their types (errors, warnings, etc.) and listed in alphabetical order.

The error codes are provided within square brackets. The '**…**' ellipses are replaced with the corresponding values when the messages are recorded and/or displayed.

If the required actions are marked with bullets, this means that you do not need to perform all the steps. You can stop as soon as the problem is resolved. However, if the actions are numbered, you should follow the entire sequence.

4.1. Debug Messages

The debug messages can be recorded only by a routine running in debug mode (see descriptions of the RORFLSET task parameter and RORPARM("DEBUG") local node in the source code of the ROR routine). Users do not see these messages in the regular logs.

FileMan DBS call error(s) … [-99]

The ROR package widely uses the FileMan DBS API. If an API call returns error(s) which can be safely ignored by the software, this message is recorded instead of the "FileMan DBS call error(s) … [-9]" error. The file number and IENS (if available) passed to the API are appended to the end of the message. The text of the error message(s) returned by the API is recorded into the log as additional information.

Patient was skipped due to counter in the file #798.3 [-66]

This message is recorded when a patient is skipped by the registry update (running in debug mode) because the value of the COUNTER field of the ERROR multiple of the ROR PENDING PATIENT file (#798.3) has reached the predefined threshold.

Each time when the registry update process encounters an error for a patient, it records a corresponding error message and increments the counter. When the counter reaches the threshold (14 by default), the registry update will continue to skip the patient until someone fixes the error and resets the counter.

User entered the "^" [-71]

Some "roll and scroll" utilities (running in debug mode) record this message if a user enters the '^' in response to a prompt.

4.2. Information Messages

The following messages provide additional useful information about a process and usually require no user intervention.

No output file has been created [-89]

This message is generated if no data has been written to the output file during the historical data extraction.

Actions required:

- Make sure that there really is no data that should be extracted for the patients processed by the corresponding historical data extraction task. Interval of the patient IENs processed by the task is shown by the output of the Display Extraction Status option of the [RORHDT MAIN] menu.

Registry '…' is inactive [-48]

The registry update and data extraction task checks if all registries defined by the task parameter are active. See the REGISTRY STATUS field of the ROR REGISTRY PARAMETERS file. Inactive registries are ignored by the task and this message is recorded for each of them.

Actions required:

- No action required if the registry has been intentionally inactivated and should remain inactive.
- Otherwise, delete the value of the REGISTRY STATUS field using the Edit Registry Parameters option of the [RORMNT MAIN] menu.

Registry setup has been completed [-41]

This message is not recorded in the log; it is sent as an alert upon successful completion of the registry setup. The alert is sent to the user who has started the registry setup (the [ROR SETUP] option).

Actions required:

- You may proceed with the remaining implementation steps after receiving this alert.

Registry Update subtask #… has been scheduled [-62]

When the registry update is started in multi-task mode, the main task records this message for each of the registry update subtasks.

Actions required:

None

The HL7 message #… has been re-queued [-93]

If the nightly task (the [ROR TASK] option) determines that an application acknowledgement for the previous HL7 message has not been received, it waits for the number of days defined by the DAYS TO WAIT FOR ACK field of the ROR REGISTRY PARAMETERS file. Then it tries to re-queue the message so that it will be resent to the AAC. This information message is recorded if the HL7 message has been successfully re-queued.

See also the "The HL7 message #… has been canceled [-94]" and "No application ACK after … attempt(s) to resend message [-67]" messages.

Actions required:

- No action is required unless the registry coordinators get the VistA alert regarding the HL7 problem(s).
- If you see this message several times in a row, please check the VistA HL7 setup at your site to make sure that the HL7 message is actually sent to the AAC and the standard VistA HL7 listener on port 5000 is started.
- Submit a Help Desk request (NOIS/Remedy) if the problem persists.

Your task #… (scheduled from GUI) has finished. [-101]

This message is not recorded into the logs. It is sent as a VistA alert to the user who scheduled the task (usually it is a report) from the Clinical Case Registries GUI.

Actions required:

- No action is required unless you want to see the report. ☺ Open the Task Manager page of the main registry window in the GUI and view, print, and/or save the report to a file.

4.3. Data Quality Messages

Data quality messages indicate semantic problems with the patient data. The program continues its execution after recording one of these errors. However, it would be a good idea to fix the reported errors whenever possible.

… was returned by the … [-100]

This message is recorded when an API does not return a value as it should. For example, the message can look like this: "No order date was returned by the OEL^PSOORRL". It is quite unlikely that you will ever see this message.

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

Invalid value. File: #…; IENS: "…"; Field(s): … [-95]

This message is recorded when an invalid value is retrieved from a file record or a required field has no value. File number, location of the record, and field number are indicated by the message text.

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

4.4. Warnings

Usually, the program continues execution after recording a warning. However, the results could be unpredictable. In addition, the process could be aborted this would not necessarily indicate an error or severe problem. In some cases the problem will go away without any intervention.

Cannot remove the patient #… from the pending list [-31]

When the errors in the patient data are fixed, the registry update process tries to delete the corresponding error references from the ERROR multiple of the ROR PENDING PATIENT file. If the deletion fails for some reason, the process records this message. Usually, this warning accompanies the "FileMan DBS call error(s) … [-9]" error message which provides some low-level details.

Actions required:

- Although this error does not severely affect normal functioning of the software, it would be a good idea to find the cause of the problem (most likely due to damage in the internal file structure) and fix it.

Error code '…' is returned by the '…' [-57]

This warning is recoded when an external API returns an error code. The "Error code '-1' is returned by the '$$GETICN^MPIF001'" message is an example.

See also the "Error code '…' is returned by the '…' [-56]" error.

Actions required:

- This is only a warning, but try to find the problem and resolve it anyway. The problem is most likely due to invalid data, dangling pointer(s), etc.

No active registries to …! [-28]

The registry update and/or data extraction routines record this message if all registries in the list (defined by the task parameters) are not ready for processing. For example, they may be inactive or awaiting application acknowledgements. The "No active registries to update!" message is an example.

Usually, this warning accompanies the "Registry '…' is inactive [-48]" information message, the "Registry '…' is awaiting ACK [-49]" warning, or the "The registry … has not been populated yet. [-103]" error message.

Actions required:

- Usually, no action is required. However, if you see this message too often (let us say 2-3 times in a week), you should explore the latest logs and resolve the original problem.

No indicators are defined for the '…' Lab Search [-55]

The ROR LAB SEARCH file (#798.9) contains definitions of the criteria used by the search engine to find registry related Lab results. If a selection rule references a lab search definition but the definition does not contain at least one active search indicator (see definition of the LAB TEST multiple in the data dictionary for more details), the search engine records this warning.

In addition, the Registry Setup [ROR SETUP] option checks the presence of the search indicators and requests confirmation to proceed without them.

Actions required:

- If lab results are supposed to be used for screening patients, enter required search indicators.

- Otherwise, delete the reference to the lab search definition from the selection rule(s).

Registry '…' is awaiting ACK [-49]

The registry update and data extraction tasks check if all HL7 messages sent during the previous run have been acknowledged by the AAC. This message is recorded for each of the registries that have not received the application acknowledgements.

The tasks do not update the registry and do not extract the data until the previous message sent to the AAC is acknowledged.

There are two major causes of the problem: either the original message is not delivered to the AAC or the site does not receive and/or process the application acknowledgement on time. See the "HL7 Troubleshooting" section for more details.

Actions required:

- Usually, no intervention is required. However, if you see this messages several times during a short time frame (let us say 2-3 times during a week), you should perform the steps described in the "HL7 Troubleshooting" section of this document.

Task has been interrupted by user or by parent task [-42]

If a user stops a task (or subtask) using the Stop Task option of the TaskMan User menu, the (sub)task records this message. The remaining registry update subtasks stopped by the main task also record this message in their logs. They also do this if either one of the subtasks or the main task aborts or crashes.

Actions required:

- If you did not stop the task, find out why it was stopped.

The HL7 message #… has been canceled [-94]

If the nightly task (the [ROR TASK] option) determines that an application acknowledgement for the previous HL7 message has not been received, it tries to re-queue the message so that it will be resent to the AAC. If this attempt fails, the HL7 message is canceled and this warning is recorded. A new HL7 message containing both the data from the previous message and possibly the new data will be generated in this case.

See also the "The HL7 message #… has been re-queued [-93]" and "No application ACK after … attempt(s) to resend message [-67]" messages.

Actions required:

- No action is required after the first occurrence of this warning.
- If you see this message several times in a row, please check the VistA HL7 setup at your site.
- Submit a Help Desk request (NOIS/Remedy) if the problem persists.

4.5. Database Errors

The database errors are caused by invalid and/or ambiguous data (missing records, invalid values, dangling pointers, damaged cross-references, etc). Processing of the patient data or the whole task is usually aborted by these errors. Some intervention from the IRM personnel is almost always required.

Cannot find the '…' drug class [-47]

Usually, this message is recorded by a post-install routine during the installation of the registry build or patch. It means that the routine cannot find the required drug class in the VA DRUG CLASS file (#50.605) when it tries to create a record in the ROR PHARMACY CODE file (#798.6) linking the drug class and the registry.

Actions required:

- You should confirm existence of the appropriate drug class record (maybe, some patch has not been installed) and restart the installation of the registry build/patch using the Restart Install of Package(s) option in the KIDS Installation menu.

Cannot load registry parameters [-46]

Each properly defined registry has the corresponding record in the ROR REGISTRY PARAMETERS file (#798.1). This message is recorded when the record does not exist or the data from it cannot be loaded.

Actions required:

1. Check if the registry parameters are defined in the file #798.1 and the record has a valid internal structure.
2. Then check if the cross-references (especially "B") have the corresponding entries.

Cannot obtain results of the Lab tests [-27]

The package records this message if the Lab API ($$GCPR^LA7QRY) cannot extract the Lab test results and returns an error code. Two variations of this error are seen most often. The first one is:

```
Cannot obtain results of the Lab tests
Invalid patient identifier passed
No patient found with requested identifier
Location: LABRSLTS^RORUTL02
```

It means that the Lab API was not able to identify the patient using his/her SSN or ICN. The cause of the problem is that the patient has neither valid SSN nor valid ICN. Valid SSN, ICN or both should be assigned to the patient to fix the problem. Local ICNs (they have 9 digits instead of 10) also cause this error.

The second variation of the message:

```
Cannot obtain results of the Lab tests
No patient found with requested identifier
Location: LABRSLTS^RORUTL02
```

It means that the patient has SSN and/or ICN but there are no appropriate entries in the corresponding cross-references. You should check if the "SSN" and "AICN" cross-references of the PATIENT file (#2) have corresponding references to the patient record.

Actions required:

- Check if the patient has an Integration Control Number and if it is a national ICN (10 digits). If the patient has a local ICN (9 digits) or no ICN at all, initiate the procedure of assigning the national ICN.
- Check if the patient has a valid SSN (it is used by the Lab API if the ICN is not available).
- Check the "SSN" and "AICN" cross-references for the entries referencing the patient record. Restore these entries if they do not exist.
- After fixing the ICN and SSN problems, check the value of the COUNTER field of the ERROR multiple of the patient record in the ROR PENDING PATIENT file (#798.3). If it is not less than 14, reset it to 1. Thus you will allow the search engine to process this patient again.
- Wait until completion of the next run of the nightly task (the [ROR TASK] option) and check if there are no more errors associated with the patient.

Duplicate records in the file #95.3 for LOINC code … [-30]

This error is recorded when two records with the same LOINC code (the .01 field) are found in the LAB LOINC file (#95.3). The file is DINUM'ed, so you will probably never see this message. ☺

Actions required:

1. If you do see this message, it means that the file #95.3 has invalid entries in the "B" cross-reference. Display the global node ^LAB(95.3,"B",*LOINC* (replace *LOINC* with the LOINC code from the message) using the ^%G utility (or the VGL shortcut in the VPE shell).
2. If there is more than one IEN under this node, find the one that reference the correct record of the file and delete the other(s).

FileMan DBS call error(s) … [-9]

The ROR package widely uses the FileMan DBS API. If an API call returns any error(s), this message is recorded. The file number and IENS (if available) passed to the API are appended to the end of the message. The text of the error message(s) returned by the API is recorded into the log as additional information.

Most often, dangling pointers, invalid or missing cross-reference entries, and records with invalid internal structure cause this kind of error.

Actions required:

- Locate the erroneous data and fix it.
- If you are not sure how to do this yourself, submit a Help Desk request (NOIS/Remedy).

Invalid or missing record in the … file (IEN: …) [-102]

This error is recorded when a record of the file identified by a pointer cannot be loaded. A missing record (dangling pointer) or a record with damaged internal structure can cause this problem. The file name and location of the record are indicated by the text of the message.

Actions required:

- Locate the erroneous data and fix it.
- If you are not sure how to do this yourself, submit a Help Desk request (NOIS/Remedy).

4.6. Error Messages

These messages indicate serious run-time or registry design problems. Processing of the patient data or the whole task is usually aborted by these errors. Some intervention from the IRM personnel is almost always required.

Application acknowledgement with … processing ID [-90]

The code processing an HL7 application acknowledgement records this error if the BHS segment of the message has a processing ID other than "P" (production). This means that a test, debug, or unknown message somehow found its way into the production account. The Clinical Case Registries software will ignore this HL7 message.

Actions required:

- Find out where the HL7 message in question has come from and inform the sender IRM personnel about the problem.

Bad registry name: '…' [-10]

This error message indicates that an empty string (or no value at all) is passed into a function instead of the registry name.

You may never see this error in the logs because it is generated by the functions that are called from the remote procedures. There are usually no open logs when these procedures are called.

Actions required:

- Check the user-defined parameters (task parameters, user responses, etc.), which define registry names.

Cannot complete the '…' checkpoint! [-51]

A patch pre-install or post-install routine will record this error if the checkpoint cannot be completed (i.e., the $$COMCP^XPDUTL function returns a zero value). Usually, this means an error in the patch design. However, damaged internal structure of the INSTALL file (#9.7) can also cause this error.

Actions required:

- Check integrity of the INSTALL file (#9.7) and fix the possible problems (make sure that you know what you are doing).
- Submit a Help Desk request (NOIS/Remedy).

Cannot create Mailman message stub [-77]

This error is generated if the XMZ^XMA2 procedure (called by the ROR software) cannot create a message stub in the MESSAGE file (#3.9). Most probably, the cause of this is an error in the software design when not all or invalid parameters are supplied.

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

Cannot create the '…' checkpoint! [-50]

A patch pre-install or post-install routine will record this error if the checkpoint cannot be created (i.e., the $$NEWCP^XPDUTL function returns a zero value). Usually, this indicates an error in the patch design. However, damaged internal structure of the INSTALL file (#9.7) can also cause this error.

Actions required:

- Check integrity of the INSTALL file (#9.7) and fix the possible problems (make sure that you know what you are doing).
- Submit a Help Desk request (NOIS/Remedy).

Cannot de-queue data extraction task [-33]

This error is generated if a scheduled data extraction task cannot be de-queued (i.e., the ZTSK(0) node has a zero value after the DQ^%ZTLOAD call). For example, the Stop a Task option of the [RORHDT MAIN] menu could display this message if the option cannot de-queue the historical data extraction task, which has been scheduled earlier but has not started yet.

Actions required:

- Check if the task is actually scheduled.
- Submit a Help Desk request (NOIS/Remedy).

Cannot enable the '…' protocol [-53]

This error is recorded by a patch post-install routine if it cannot re-enable the event protocol (i.e., the $$PRODE^XPDUTL function returns a zero value).

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

Cannot find a descriptor of the registry [-1]

The registries are identified by their unique names. This error is generated if the registry parameters cannot be found in the ROR REGISTRY PARAMETERS file (#798.1). The registry name is provided as additional information.

Actions required:

- Verify the user-defined parameters (task parameters, user responses, etc), which define the registry name(s).
- Check if the user who started/scheduled the task has the required security key(s).
- Check if the registry parameters record exists in the file #798.1.
- Check integrity of the file #798.1 and fix the possible problems (make sure that you know what you are doing).
- Submit a Help Desk request (NOIS/Remedy).

Cannot find a descriptor of the rule [-3]

The selection rules are identified by their unique names. This error is generated if the selection rule cannot be found in the ROR SELECTION RULE file (#798.2). The selection rule name is provided as additional information.

Actions required:

- Check if the selection rule record exists in the file #798.2.
- Check integrity of the file #798.2 and fix the possible problems (make sure that you know what you are doing).
- If the selection rule is associated with the user-defined registry, check the registry definition (registry parameters and selection rules) and either correct the name that references the non-existent selection rule or define the missing rule.

- Submit a Help Desk request (NOIS/Remedy) if you received this error for a national registry (Hep C, ICR, etc).

Cannot find a list item (file #799.1) [-80]

CCR uses a custom variety of "set of codes" fields that depend on the registry they are associated with. For example, the REASON FOR INACTIVATION FIELD (2.2) of the ROR LOCAL REGISTRY file (#798) has different sets of codes for Hep C and ICR registry records.

Codes and corresponding descriptions for these fields are stored in the ROR LIST ITEM file (#799.1). If a code cannot be found in this file then the "Cannot find a list item" error message is recorded into the error log.

To avoid this problem, you must not delete any records from the ROR LIST ITEM file since records of other files can already point to them. Moreover, you must never modify the records associated with the national registries.

Actions required:

- If the error was recorded by a user-defined registry, check the registry definition and add missing record(s) to the ROR LIST ITEM file.
- Check integrity of the file #799.1 and fix the problems (make sure that you know what you are doing).
- Submit a Help Desk request (NOIS/Remedy) if you received this error for a national registry (Hep C, ICR, etc).

Cannot find HL7 message ID in the file #798: '…' [-52]

A message ID of an individual message sent to the AAC (inside a batch HL7 message) is stored in the MESSAGE ID field (10) of the patient record in the ROR LOCAL REGISTRY file (#798). The routine processing an application acknowledgement received from the AAC generates this error if an individual HL7 error message cannot be associated with the patient using the original message ID.

Actions required:

- Check integrity of the file #798 and fix the possible problems (make sure that you know what you are doing). Pay special attention to the "AM" cross-reference.
- Submit a Help Desk request (NOIS/Remedy) if you have seen this error several times in a row.

Cannot find report parameters (file #799.34) [-86]

This message is recorded if the software cannot find a report descriptor in the ROR REPORT PARAMETERS file.

Actions required:

- Check integrity of the file #799.34 and fix the possible problems (make sure that you know what you are doing). Pay special attention to the "KEY" uniqueness index.
- Submit a Help Desk request (NOIS/Remedy).

Cannot find the data element [-69]

This message indicates that the search engine cannot find the data element with provided name. According to the selection rules, all data elements are referenced either by their names (unique only in the file context) or by their unique codes.

Actions required:

- Check if the data element record exists in the DATA ELEMENT multiple (2) of the corresponding top-level record (file definition) in the ROR METADATA file (#799.2).
- Check integrity of the file #799.2 and fix the possible problems (make sure that you know what you are doing).
- If you received this error for one of your user-defined registries, review the selection rules and correct the invalid data element reference(s). You can use the PRTMDE^RORUTL06 entry point to display the list of supported data elements and their characteristics.
- Submit a Help Desk request (NOIS/Remedy) if you received this error for a national registry (Hep C, ICR, etc).

Cannot find the task #… in the ROR TASK file [-83]

This error is recorded if there is no match for the task number within the ROR TASK file (#798.8).

When a task is started or scheduled from the CCR GUI, a record is also created in the file #798.8. The internal entry number of the record is equal to the number assigned to the VistA task by the TaskMan. This record is used to track the progress of the task and store the results.

Actions required:

- Refresh the task list in the GUI and try to repeat the action that caused the error.
- Check integrity of the file #798.8 and fix possible problems (make sure that you know what you are doing).
- Submit a Help Desk request (NOIS/Remedy) if you receive this error frequently.

Cannot get closed root name of file #… (IENS: …) [-98]

The CCR software often uses the $$ROOT^DILFD function to get the closed root name of a file. If the function does not return the reference then this error is recorded. The (sub)file number and location of the parent record (in case of a sub-file) are indicated by the message text.

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

Cannot load and prepare lab search data [-12]

This error is recorded if the Lab search definition cannot be loaded from the ROR LAB SEARCH file (#798.9). The lower level errors (for example, the "FileMan DBS call error(s) … [-9]" and "Non-existent LOINC code … in the registry parameters [-29]") preceding this one clarify the actual cause(s) of the problem.

Actions required:

- Check the preceding lower level errors and fix them.

Cannot load the selection rules [-19]

This error is recorded if the selection rules cannot be loaded from the ROR SELECTION RULE file (#798.2). The lower level errors ("FileMan DBS call error(s) … [-9]", "Cannot find a descriptor of the rule [-3]", etc) preceding this one clarify the actual cause(s) of the problem.

Actions required:

- Check the preceding lower level errors and fix them.

Cannot lock the record(s) of … [-11]

If a process cannot lock record(s) of a file, it generates this error and aborts. Usually, this means that another process has already locked the record(s).

Actions required:

- Check the list of running tasks (Systems Manager Menu → Taskman Management → List Tasks → Running tasks) for any tasks in the ROR namespace. It is possible that the registry update (the TASK^ROR entry point) or the data extraction (the TASK^ROREXT entry point) has not finished yet.
- Check the system status (Systems Manager Menu → Operations Management → System Status) for any running routines in the ROR namespace. You may need to repeat this procedure on all nodes of a cluster (you can also use the D CLUSTER^%SY command in DSM).
- Check the lock table (the D CLUSTER^LOCKTAB command in DSM) for the locked nodes in the ROR namespace.
- If you have seen this error several times in a row, submit a Help Desk request (NOIS/Remedy).

Cannot lock the registries [-13]

If a process cannot lock registry parameters, it generates this error and aborts. Usually, this means that another process has already locked the record(s) of the ROR REGISTRY PARAMETERS file (#798.1).

Actions required:

- Check the list of running tasks (Systems Manager Menu → Taskman Management → List Tasks → Running tasks) for any tasks in the ROR namespace. It is possible that the registry update (the TASK^ROR entry point) or the data extraction (the TASK^ROREXT entry point) has not finished yet.
- Check the system status (Systems Manager Menu → Operations Management → System Status) for any running routines in the ROR namespace. You may need to repeat this procedure on all nodes of a cluster (you can also use the D CLUSTER^%SY command in DSM).
- Check the lock table (the D CLUSTER^LOCKTAB command in DSM) for the locked ^ROR(798.1,…) global nodes.
- If you have seen this error several times in a row, submit a Help Desk request (NOIS/Remedy).

Cannot open an output file [-34]

This error is generated when a process cannot create an output file (e.g., during the historical data extraction).

Actions required:

- Check if the file name (both the output directory and the file) is valid.
- Verify if the output directory exists.
- Check if the M-system (or the user) has write access to the directory.
- Check the free space on the device where the directory is stored.
- Submit a Help Desk request (NOIS/Remedy) if you cannot eliminate the problem yourself.

Cannot prepare data extraction definitions [-22]

The data extraction task generates this error if the data extraction definitions cannot be loaded from the ROR REGISTRY PARAMETERS file (#798.1) and prepared for processing. The lower level errors ("FileMan DBS call error(s) … [-9]", "Invalid extraction entry point: … [-44]", etc) preceding this one clarify the actual cause(s) of the problem.

Actions required:

- Check the preceding lower level errors and fix them.

Cannot prepare selection rules [-14]

The registry update task generates this error if the selection rules cannot be loaded from the ROR SELECTION RULE file (#798.2) and prepared for processing. The lower level errors ("Cannot load the selection rules [-19]", "Cannot sort the selection rules [-20]", etc) preceding this one clarify the actual cause(s) of the problem.

Actions required:

- Check the preceding lower level errors and fix them.

Cannot retrieve Patient details (DFN: …) from File #… [-36]

This error is recorded by the data extraction routines if a valid patient record does not exist in the PATIENT file (#2).

Actions required:

- Check if the patient record exists in the PATIENT file. You can get the internal entry number from the text of the message. Check if it is valid (i.e., it should have the 0-node).
- Check for invalid entries in the cross-references of the PATIENT file that reference non-existent records.
- If you do not know how to eliminate the problem, submit a Help Desk request (NOIS/Remedy).

Cannot send the batch HL7 message [-24]

The data extraction task generates this error if the GENERATE^HLMA procedure cannot create an HL7 message and returns an error code. The error code and the corresponding error message are displayed/recorded also.

Actions required:

- Consult the HL7 documentation to find the cause of the problem.
- Submit a Help Desk request (NOIS/Remedy) if you cannot eliminate the problem yourself.

Cannot set up HL7 environment variables [-23]

This error is generated if the INIT^HLFNC2 procedure cannot initialize the HL7 environment. The error code and the message returned by the HL7 API are displayed/recorded along with the main message.

Actions required:

- Check if properly defined ROR protocols, application parameters and logical links exist in the corresponding HL7 files.
- Consult the HL7 documentation to find the cause of the problem.
- Check the integrity of HL7 files.
- Submit a Help Desk request (NOIS/Remedy) if you cannot eliminate the problem yourself.

Cannot sort the selection rules [-20]

The routine that prepares the selection rules records this message if it cannot sort the rules and resolve all dependencies. The lower level errors (for example, "Circle rule references [-5]") preceding this one clarify the actual cause(s) of the problem.

Actions required:

- Check the preceding lower level errors and fix them.

Cannot start the registry update in multitask mode [-61]

The error is generated if the main registry update task cannot lock all required global nodes before scheduling the subtasks.

Actions required:

- Check if the registry update is running already.
- Check the lock table (the D CLUSTER^LOCKTAB command in DSM) for a "stray" task that locks the ^XTMP("RORUPDJ…",…) or ^XTMP("RORUPDR…",…) global nodes.
- Submit a Help Desk request (NOIS/Remedy) if you cannot eliminate the problem yourself.

Cannot update demographic data [-16]

This error message indicates that the patient's demographic data in the ROR PATIENT file cannot be updated. The lower level errors ("Cannot lock the record(s) of … [-11]", "FileMan DBS call error(s) … [-9]", etc) preceding this one clarify the actual cause(s) of the problem.

Most probably, you will never see this error in the logs because it is generated by the functions that are called from the remote procedures. The GUI uses these procedures to check if the patient should be added to the registry and to actually add him/her to the registry. There usually are no open logs when these procedures are called.

Actions required:

- Check the preceding lower level errors and fix them.

Circle rule references [-5]

An expression implementing a selection rule can reference other rules. The search engine sorts the selection rules and resolves the dependencies. However, if a rule directly or indirectly depends on itself, it cannot be evaluated. An example of the circular reference (a really absurd one ☺):

```
Rule A: {MAX:B}<10
Rule B: {I:23}+{C}
Rule C: {CNT:A}
```

The A rule cannot be evaluated because it depends on the B rule, which depends on the C rule and the latter one depends on A.

The name of the rule in question is recorded along with this error message (as additional information).

Actions required:

- Check the selection rules to make sure that the circle references actually exist.
- If the error is recorded for a user-defined registry, review the selection rules and redesign them to eliminate the problem.
- If several registries are processed at the same time (the task parameter can contain a list of registry names separated by commas), review the whole set of selection rules for all registries from the list. It may be required to process some of the registries by a different task.
- Submit a Help Desk request (NOIS/Remedy) if the error is associated with a national registry (Hep C, ICR, etc).

Data element #… (file #…) is not supported [-64]

This message indicates that the search engine cannot find the data element with provided code. In the selection rules, all data elements are referenced either by their names (unique only in the file context) or by their unique codes.

Actions required:

- Check if the data element record exists in the DATA ELEMENT multiple (2) of the corresponding top-level record (file definition) in the file #799.2.
- Check integrity of the file #799.2 and fix the possible problems (make sure that you know what you are doing).
- If you received this error for one of your user-defined registries, review the selection rules and correct the invalid data element reference(s). You can use the PRTMDE^RORUTL06 entry point to display the list of supported data elements and their characteristics.
- Submit a Help Desk request (NOIS/Remedy) if you are getting this error for a national registry (Hep C, ICR, etc).

Data search in file #… is not supported [-63]

The registry update routine generates this error if the metadata (the data describing the VistA data that can be processed by the search engine) of the required file does not exist in the ROR METADATA file (#799.2).

Actions required:

- Make sure that the ROR METADATA file exists.
- Submit a Help Desk request (NOIS/Remedy).

Duplicate HL7 message ID in the file #798: '…' [-39]

A message ID of an individual HL7 message that is sent to the AAC (inside a batch HL7 message) is stored in the MESSAGE ID field (10) of the patient record in the ROR LOCAL REGISTRY file (#798). The routine processing an application acknowledgement received from the AAC generates this error if an individual HL7 error message cannot be uniquely associated with the patient (using the ID of the original message).

Actions required:

- Check integrity of the file #798 and fix the possible problems (make sure that you know what you are doing). Pay special attention to the "AM" cross-reference.
- Submit a Help Desk request (NOIS/Remedy) if you have seen this error several times in a row.

Duplicate item codes (file #799.1) [-81]

CCR uses a custom variety of "set of codes" fields that depend on the registry they are associated with. For example, the REASON FOR INACTIVATION FIELD (2.2) of the ROR LOCAL REGISTRY file (#798) has different sets of codes for Hep C and ICR registry records.

Codes and corresponding descriptions for these fields are stored in the ROR LIST ITEM file (#799.1). This error is generated if two or more records of the file #799.1 have the same value of the CODE (.04) field. This is quite unlikely because the primary "A" key guarantees uniqueness of the codes. Most likely, the "KEY" index (new type cross-reference) of the file #799.1 has several entries referencing the same record.

Actions required:

- Check integrity of the file #799.1 and fix the possible problems (make sure that you know what you are doing). Pay special attention to the "KEY" index.
- Submit a Help Desk request (NOIS/Remedy).

Duplicate names of the data element [-70]

This message indicates that the search engine has found more than one definition of the data element with provided name. In the selection rules, all data elements are referenced either by their names (unique only in the file context) or by their unique codes.

Actions required:

- Check integrity of the ROR METADATA file (#799.2) and fix the possible problems (make sure that you know what you are doing). Pay special attention to the "B" index (new type cross-reference) in the DATA ELEMENT multiple (2).
- Submit a Help Desk request (NOIS/Remedy).

Duplicate registry names [-2]

The registries are identified by their unique names. This error is generated if two or more records of the ROR REGISTRY PARAMETERS file (#798.1) have the same value of the REGISTRY NAME (.01) field. This is quite unlikely because the primary "A" key guarantees uniqueness of the names. More probably, the "B" index (new type cross-reference) of the file #798.1 has several entries referencing the same record.

Actions required:

- Check integrity of the file #798.1 and fix the possible problems (make sure that you know what you are doing). Pay special attention to the "B" index.
- Submit a Help Desk request (NOIS/Remedy).

Duplicate report parameters (file #799.34) [-87]

The reports are identified by their unique codes. This error is generated if two or more records of the ROR REPORT PARAMETERS file (#799.34) have the same value in the CODE (.04) field. This is quite unlikely because the primary "A" key guarantees uniqueness of the codes. Most likely, the "KEY" index (new type cross-reference) of the file #799.34 has several entries referencing the same record.

Actions required:

- Check integrity of the file #799.34 and fix the possible problems (make sure that you know what you are doing). Pay special attention to the "KEY" index.
- Submit a Help Desk request (NOIS/Remedy).

Duplicate rule names [-4]

The selection rules are identified by their unique names. This error is generated if two or more records of the ROR SELECTION RULE file (#798.2) have the same value of the RULE NAME (.01) field. This is quite unlikely because the primary "A" key guarantees uniqueness of the names. Most likely, the "B" index (new type cross-reference) of the file #798.2 has several entries referencing the same record.

Actions required:

- Check integrity of the file #798.2 and fix the possible problems (make sure that you know what you are doing). Pay special attention to the "B" index.
- Submit a Help Desk request (NOIS/Remedy).

Error code '…' is returned by the '…' [-56]

This error is generated when an external API returns an error code. Also, if a registry update subtask finishes with an error, the "Error code '…' is returned by the 'subtask #…'" message is recorded.

See also the "Error code '…' is returned by the '…' [-57]" warning.

Actions required:

- Consult the API documentation and fix the problem that causes API failure (invalid or missing data, dangling pointers, etc).
- If an error code was returned by a registry subtask, check the log generated by the subtask and fix the recorded errors.
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

Error during the …. See log files. [-43]

This message is not recorded in the logs; it is sent as an alert. A task sends this alert to the registry coordinators if it was aborted due to a major error. At the same time, the pre- or post-install routines send the alert to the user who has started the installation.

Actions required:

- Explore the task log(s) and fix the problem(s).
- Consult the documentation to find out if the task should be restarted.
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

Error(s) during processing of the patient data [-15]

This error is recorded/displayed if the patient data cannot be processed due to the major error(s). It indicates that the data has not been processed properly. For example, a potential Hep C patient has not been added to the registry because his Lab results could not be extracted and analyzed by the search engine. The lower level errors preceding this one clarify the actual cause(s) of the problem.

Actions required:

- Check the preceding lower level errors and fix them.

External value of element #… (file #…) is not supported [-65]

This message indicates that the search engine has no means to load the external value of the data element referenced by one of the selection rules.

The search engine can load and analyze only predefined set of data fields. This set is defined by the content of the ROR METADATA file (#799.2). The corresponding API calls are hard-coded (except the FileMan DBS). To separate the logical data model used by the search engine from the physical data storage (FileMan files), all data elements are referenced either by their names (unique only in the file context) or by their unique codes.

Actions required:

- Check if the file #799.2 exists and it is not corrupted.
- If you received this error for one of your user-defined registries, review the selection rules and correct the invalid data element reference. If you definitely need this data element, try to use its internal value. You can use the PRTMDE^RORUTL06 entry point to display the list of supported data elements and their characteristics.
- Submit a Help Desk request (NOIS/Remedy) if you received this error for a national registry (Hep C, ICR, etc).

Field '…' not found [-7]

This message indicates an error in the software design. Hopefully, you will never see it. ☺

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

File '…' not found [-58]

This error indicates that a valid definition of the FileMan file cannot be found in the data dictionary.

Actions required:

- Check integrity of the ROR METADATA file (#799.2) and fix the possible problems (make sure that you know what you are doing).
- Check if the file exists and has a valid definition in the VistA data dictionary.
- Find out if this file should actually exist.
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

Illegal attempt to access the registries from the GUI [-91]

If a user without the required security keys tries to access a registry using the CCR GUI, a special error log (Access Violation activity) is created and this error is recorded. At the same time, a VistA alert is sent to the registry coordinators.

Actions required:

- Investigate the incident.

Invalid entry point: '…' [-17]

A registry definition in the ROR REGISTRY PARAMETERS file can reference different callback functions. For example: BEFORE UPDATE (6.1), AFTER UPDATE (6.2), etc. This error is generated if a reference has an invalid format.

Actions required:

- If the error is associated with a user-defined registry, check the registry definition and correct the invalid reference. The reference must have the following format: $$TAG^ROUTINE.
- Submit a Help Desk request (NOIS/Remedy) if the error is associated with a national registry (Hep C, ICR, etc).

Invalid extraction entry point: … [-44]

This error is generated if a reference to one of the data extraction callback functions (for example, the MESSAGE BUILDER field of the ROR REGISTRY PARAMETERS file) has an invalid format or the corresponding function does not exist.

Actions required:

- If the error is associated with a user-defined registry, check field 10 of the registry definition and correct the invalid value. The reference must have the following format: $$TAG^ROUTINE.
- Make sure that the routine exists and contains the tag.
- Submit a Help Desk request (NOIS/Remedy) if the error is associated with a national registry (Hep C, ICR, etc).

Invalid header of the HL7 message (or no header at all) [-68]

The routine processing the application acknowledgements generates this error if an HL7 batch message received from the AAC has an invalid BHS segment or no header at all.

Actions required:

- Check the HL7 application acknowledgement received from the AAC ([HL MAIN MENU] → Message Management Options → View Transmission Log (TCP only) → Message Search) to make sure that the message actually has an invalid header. See the "HL7 Troubleshooting" section for additional information.
- Submit a Help Desk request (NOIS/Remedy) if you have seen this error several times in a row.

Invalid or missing IEN of selection rule [-45]

This error is generated if a list of selection rule IENs passed into a function contains an invalid value. The message indicates an error in the software design. Hopefully, you will never see it. ☺

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

Invalid task number: '…' [-85]

This error is generated if an invalid (not greater than zero) task number is passed into a function. The message indicates an error in the software design. Hopefully, you will never see it. ☺

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

Invalid update entry point: … [-6]

This error is generated if a reference to one of the registry update callback functions (for example, the BEFORE UPDATE field of the ROR REGISTRY PARAMETERS file) has an invalid format or the corresponding function does not exist.

Actions required:

- If the error is associated with a user-defined registry, check the fields 6.1 and 6.2 of the registry definition and correct the invalid value(s). The references must have the following format: $$TAG^ROUTINE.
- Make sure that the routines exist and contain the corresponding tags.
- Submit a Help Desk request (NOIS/Remedy) if the error is associated with a national registry (Hep C, ICR, etc).

Incorrect data extraction period: '…-…' [-32]

This error indicates an invalid time frame for the data extraction (no date(s) or the start date is later than the end date). The historical data extraction process or the nightly task (only in debug mode) can generate this error.

Actions required:

- Validate the parameters defining the time frame.
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

Internal value of element #… (file #…) is not supported [-65]

This message indicates that the search engine has no means to load the internal value of the data element referenced by one of the selection rules.

The search engine can only load and analyze a predefined set of data fields. This set is defined by the content of the ROR METADATA file (#799.2). The corresponding API calls are hard-coded (except the FileMan DBS). To separate the logical data model used by the search engine from the physical data storage (FileMan files), all data elements are referenced either by their names (unique only in the file context) or by their unique codes.

Actions required:

- Check if the file #799.2 exists and it is not corrupted.
- If you received this error for one of your user-defined registries, review the selection rules and correct the invalid data element reference. If you definitely need this data element, try to use its external value. You can use the PRTMDE^RORUTL06 entry point to display the list of supported data elements and their characteristics.
- Submit a Help Desk request (NOIS/Remedy) if you received this error for a national registry (Hep C, ICR, etc).

No application ACK after … attempt(s) to resend message [-67]

This error message indicates a persistent problem with the HL7 data transmissions. Appropriate measures must be taken as soon as possible.

The software waits for an acknowledgement for the number of days defined by the DAYS TO WAIT FOR ACK field of the ROR REGISTRY PARAMETERS file. Then an attempt to re-queue the HL7 message is made so that it will be resent to the AAC. The "The HL7 message #… has been re-queued [-93]" information message is recorded after successful re-queuing.

If the attempt to re-queue the HL7 message fails, the message is cancelled, a new message is generated, and the "The HL7 message #… has been canceled [-94]" warning is recorded into the log. The new HL7 message will contain both the data from the previous message and possibly some new data.

If the application acknowledgement is not received after several attempts to resend the message, the nightly task records the "No application ACK after … attempt(s) to resend the message" message, sends it as a VistA alert to the registry coordinators, and sends an e-mail message to the mail group defined by the NATIONAL NOTIFICATION E-MAIL field (13.3) of the ROR REGISTRY PARAMETERS file (#798.1). The NUMBER OF RETRIES FOR ALERT field (13.2) of the file #798.1 defines the number of attempts before the message is sent. For example, if this parameter has a value of 2 (by default) then the alert and notification will be sent after every other attempt to re-queue the message.

☞ The registry is not updated and the data is not extracted until the last HL7 message is acknowledged by the AAC.

Actions required:

- Follow the steps described in the "HL7 Troubleshooting" section.
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

No event driver protocol [-25]

The data extraction process generates this error if the PROTOCOL field (13) of the registry parameters in the ROR REGISTRY PARAMETERS file (#798.1) has no value. This field should reference the HL7 event driver protocol.

Actions required:

- If you received this error for one of your user-defined registries, enter the name of the protocol. Ignore the error if your registry is not supposed to send data anywhere.
- Submit a Help Desk request (NOIS/Remedy) if the error is related to a national registry (Hep C, ICR, etc).

Non-existent LOINC code … in the registry parameters [-29]

This error is generated if a LOINC code referenced by the Lab search criteria in the ROR LAB SEARCH file or by a record of the EXTRACTED RESULT multiple (12) of the ROR REGISTRY PARAMETERS file is not defined in the LAB LOINC file (#95.3).

Actions required:

- Make sure that the LAB LOINC file exists and it is up to date.
- If you received this error for one of the user-defined registries, make sure that valid LOINC codes are used.
- Submit a Help Desk request (NOIS/Remedy) if the error is related to a national registry (Hep C, ICR, etc).

Not all four HL7 encoding characters are defined [-75]

The routine that initializes the HL7 environment (it calls the INIT^HLFNC2 procedure) records this error if not all four encoding characters ("^~\&") are defined in the HL7 application parameters (both sending and receiving applications).

Actions required:

- Enter required encoding characters (you will need programmer mode access because the FileMan does not allow entering '^' as the first character of the field).
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

Number of messages in the batch does not match the BTS [-74]

This error is recorded by the routine processing application acknowledgements if the number of individual messages (the number of MSH segments) in an acknowledgement batch received from the AAC does not match the number from the trailing segment of the batch (the BTS-1 field).

Actions required:

- Submit a Help Desk request (NOIS/Remedy) if you see this error several times in a row.

Parameter … has an invalid value: '…' [-88]

This error is generated if a parameter of a function or remote procedure has an invalid value. The message indicates an error in the software design. Hopefully, you will never see it. ☺

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

Routine '…' does not exist [-18]

A registry definition in the ROR REGISTRY PARAMETERS file can reference different callback functions. For example: BEFORE UPDATE (6.1), AFTER UPDATE (6.2), etc. This error is generated if a referenced routine does not exist.

Actions required:

- If the error is associated with a user-defined registry, check the registry definition. It is possible that the routine name has been entered incorrectly.
- Make sure that the routine actually exists in the account.
- Submit a Help Desk request (NOIS/Remedy) if the error is associated with a national registry (Hep C, ICR, etc).

Scheduled subtasks have not been started by TaskMan [-78]

If the registry update is started in multi-task mode, the main task spreads the patients among several subtasks, schedules and monitors them. If for some reason the TaskMan fails to start one of the scheduled subtasks, the main task records this error, stops and/or de-queues all remaining subtasks and aborts.

One of the possible reasons for this could be an extremely busy system with a very long list of tasks waiting for partitions.

Actions required:

- Explore the package and TaskMan logs, check status of the TaskMan ([EVE] → Taskman Management → Taskman Management Utilities → Monitor Taskman), and then find and eliminate the problem that prevents the TaskMan from starting the subtasks.
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

Subtask #… crashed (see TaskMan logs) [-60]

The main task monitors the registry update subtasks and it can detect if one of them crashed due to a run-time error. The task records this error, stops and/or de-queues all remaining subtasks and aborts.

Actions required:

1. Note date and time when the message was recorded.
2. Search the list of trapped run-time errors ([EVE] → Programmer Options → Error Processing → Error Trap Display) for an error(s) recorded just before that moment. Bear in mind that the error could occur in the routine from a namespace different from the ROR. Therefore, it will be necessary to explore the stack snapshots in the possible error record(s).
3. Explore the snapshot of the local variables and other data, and then find and eliminate the problem.
4. Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

Syntax error in the expression [-21]

The parser processing the expressions that implement the selection rules generates this error if it discovers a syntax error in one of them. Some additional information that may help to identify the error is recorded/displayed along with the message.

Actions required:

- If the error is associated with a user-defined registry, check the value of the EXPRESSION field of the registry selection rule(s) in the ROR SELECTION RULE file (#798.2). The field should contain a valid M expression with additional macros (enclosed within curly brackets) described in the technical manual.
- Submit a Help Desk request (NOIS/Remedy) if the error is associated with a national registry (Hep C, ICR, etc.).

The […] option must not be running during installation [-76]

An environment check routine (supplied with a patch) displays this message if the option runs when the installation is started (i.e., when it is not supposed to run).

Actions required:

- Check if the task associated with the option is actually running ([EVE] → Taskman Management → List Tasks → Running tasks).
- If the task is running and the installation instructions indicate that it should not, then let us say that you should have read the installation instructions more carefully (preferably before the installation ☺). Delay the installation until the task finishes.
- If there is no such task running in the system, then the developers should have designed this software more carefully. Please submit a Help Desk request (NOIS/Remedy).

The '…' Lab Search is not defined [-54]

This error message indicates that the lab search criterion referenced by a selection rule is not defined in the ROR LAB SEARCH file (#798.9).

Actions required:

- If the error is associated with a user-defined registry, review the registry selection rules in the file #798.2 and the Lab search criterion in the file #798.9. Either amend the reference to the criterion or define it if necessary.
- Submit a Help Desk request (NOIS/Remedy) if the error is associated with a national registry (Hep C, ICR, etc).

The patient is not in the … [-97]

This error message is generated if there was an attempt to perform a registry-specific action on a patient who is not in the registry (e.g., an attempt to delete a patient from the registry if they are not there).

The problem can occur if someone else has deleted the patient from the registry just before you try to perform some action on the patient's registry record. A flaw in the software design can also cause this error. But hopefully, you will never see it. ☺

Actions required:

- If you get this error in the CCR GUI, refresh the list of patients and check if the patient's record is still in the registry.
- Submit a Help Desk request (NOIS/Remedy) if you see this error often.

The registry … has not been populated yet. [-103]

This message is recorded if the registry name is added to the parameters of the nightly task (the [ROR TASK] option) before the registry is populated (during the patch installation or by the [ROR SETUP] option).

☞ When more than one registry is updated by the nightly task, the same time frame is used for all processed registries. The start date is determined as the earliest date from the REGISTRY UPDATED UNTIL field (1) of the ROR REGISTRY PARAMETERS file (#798.1).

Actions required:

- Remove the registry from the task parameters; do not forget to put it back when the initial registry population is complete.
- Ignore the error until the initial registry population is complete.

The task '...' cannot be scheduled at '...' [-82]

This error is displayed to the user of the CCR GUI if the VistA TaskMan cannot schedule the task/report at the requested time.

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

Timeout [-72]

This error is displayed and recorded if a timeout occurs while waiting for user input.

Actions required:

None.

Undefined variable: '...' [-40]

This error occurs when a local variable is not defined or it is equal to an empty string, while it supposed to have a value (for example, HL7 field and component separators during the message processing). Usually, this error indicates a flaw in the software design. Hopefully, you will never see it. ☺

Actions required:

- Submit a Help Desk request (NOIS/Remedy).

5. Alerts

The Clinical Case Registries software can send alerts either to the registry coordinators whose names are referenced by the COORDINATOR multiple (14) of the ROR REGISTRY PARAMETERS file (#798.1), or to the user who has performed an action (via a terminal or the GUI) or scheduled the task.

```
Error during the data extraction.  See log files.
Registry Name: ...
```

This alert is sent to the registry coordinators if the data extraction process is aborted due to an unrecoverable error (most probably due to invalid or missing data, dangling pointers, etc).

Actions required:

- Explore the corresponding logs and fix the error(s).
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

```
Error during the post-install.  See log files.
Registry Name: ...
```

If a post-install routine aborts due to an unrecoverable error, it sends this alert to the user who has started the installation.

Actions required:

- Explore the corresponding logs, fix the error(s), and restart the installation using the Restart Install of Package(s) option.
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

```
Error during the pre-install.  See log files.
Registry Name: ...
```

If a pre-install routine aborts due to an unrecoverable error, it sends this alert to the user who has started the installation.

Actions required:

- Explore the corresponding logs, fix the error(s), and restart the installation using the Restart Install of Package(s) option.
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

```
Error during the registry setup.  See log files.
Registry Name: ...
```

A registry setup routine sends this alert to the user who has started/scheduled the setup task (for example, the [ROR SETUP HEPC] option) if it aborts because of an unrecoverable error.

Actions required:

- Explore the logs associated with the registry setup task(s), fix the error(s), and restart the registry setup (see the Installation Guide for more details regarding the restart).
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

```
Error during the registry update.  See log files.
```

This alert is sent to the registry coordinators if the registry update process is aborted due to an unrecoverable error.

Actions required:

- Explore the corresponding logs and fix the error(s).
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

```
Historical data extraction task has finished (RC=...)
```

Every historical data extraction task sends this alert to the user who has started/scheduled the task. The value displayed after the "RC=" is the task return code. Non-zero value of this code indicates problem(s) during execution of the task.

Actions required:

- If the return code is not zero, explore the corresponding logs; fix the error(s), and restart the task (see the Installation Guide for more details regarding the historical data extraction).
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

```
No application ACK after ... attempt(s) to resend message

The application acknowledgement for the HL7 message #...
(generated by the '...') has not been received after
... attempt(s) to resend the message. Please contact the
IRM personnel and the Austin Automation Center (AAC) and
investigate the problem as soon as possible!

  Message ID....... ...
  Message status... ...
  Status updated... ...
  Error message.... ...
  Error type....... ...
  # of retries..... ...
  Queue position... ...
  # Open failed.... ...
  ACK timeout...... ...
```

This alert is sent to the registry coordinators and indicates a persistent problem with the HL7 data transmissions. Appropriate measures must be taken as soon as possible.

The nightly task (the [ROR TASK] option) sends this alert when the application acknowledgement is not received from the AAC after several attempts to resend the HL7 message.

See description of the "No application ACK after … attempt(s) to resend message [-67]" error for more details.

Actions required:

- Follow the steps described in the "HL7 Troubleshooting" section.
- Submit a Help Desk request (NOIS/Remedy) if you cannot resolve the problem yourself.

```
Patient Name xxxx has an ICD-9 code or hepatitis serology test result consistent with
Hepatitis C infection but has been inactivated from the Hepatitis C Case Registry
Please make sure that the patient has the correct diagnosis in the medical record.
```

This alert is sent to the user who inactivates (using the GUI) a registry patient who has passed the selection rules.

Actions required:

- Make sure that the patient has the correct diagnoses in the medical record.

```
Please ensure that you add the appropriate ICD-9 code to the Problem List for
patient PatientName LastFour
```

If a patient who has passed no selection rules is reactivated (within the GUI), this alert is sent to the user who performed the reactivation.

Actions required:

- Add the appropriate ICD-9 code(s) to the patient's problem list.

```
Please ensure that you add the appropriate ICD-9 code to the Problem List for:
Patient: PatientName    Last four: NNNN
```

This alert is sent to a user who manually added to the registry (within the GUI) a patient who had not passed any selection rules.

Actions required:

- Add the appropriate ICD-9 code(s) to the patient's problem list.

```
Record of Clinical Case Registries has been (in)activated.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
A record of the Immunology Case Registry has been inactivated.

  Patient: PatientName (LastFour)

However, the patient has an ICD-9 code(s) or test result(s) consistent
with the registry. Please make sure that the patient has the correct
diagnosis in the medical record.
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

This alert is sent to the user who inactivates (using the CCR GUI) a registry patient who has passed the selection rules.

Actions required:

- Make sure that the patient has the correct diagnoses in the medical record.

```
Record of Clinical Case Registries has been (in)activated.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
A record of the Immunology Case Registry has been (re)activated.
```

```
   Patient: PatientName (LastFour)

Please ensure that you add the appropriate ICD-9 code(s) to the Problem
List for this patient.
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

If a patient who has passed no selection rules is reactivated or added to the registry manually (using the CCR GUI), this alert is sent to the user who performed the activation.

Actions required:

- Add the appropriate ICD-9 code(s) to the patient's problem list.

```
ROR: Attempt of unauthorized access to the file #...

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
An attempt of unauthorized access to the Clinical Case Registries data
has been made on ...

Violator: UserName (DUZ=...)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

This alert is sent to the registry coordinators when a user without appropriate security keys tries to access protected CCR files.

Actions required:

- Investigate the case.

```
ROR: Your task #... (scheduled from GUI) has finished.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Your task/report scheduled from the Clinical Case Registries GUI
application has finished. You can view the results using the Task
Manager page of the main window of the GUI.
Task description: '...'
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

This alert is sent to the user who started or scheduled a task/report when the task finishes or aborts.

Actions required:

- View, print, and/or save the report using the GUI Task Manager tab.

```
Task has been interrupted by user or by parent task
```

The nightly task (the [ROR TASK] option) sends this alert to the registry coordinators if it (or any of its subtasks) is interrupted by a user.

See description of the "Task has been interrupted by user or by parent task [-42]" warning for more details.

Actions required:

- Find out who (and why) stopped the task.

6. Glossary

AAC	Austin Automation Center
API	Application Program Interface
Application acknowledgement	A batch HL7 message that is sent by the AAC to a VistA site. It acknowledges that the data received from the site has been processed and informs about the errors discovered during the processing. The Clinical Case Registries software automatically processes the application acknowledgements and records the received error messages in the logs (the ACKNOWLEDGEMENT PROCESSING sections).
BHS	Batch Header Segment is the first segment of a batch HL7 message. It contains the information similar to that stored in the MSH segments (sending and receiving applications, type of the message, message ID, etc).
BTS	Batch Trailing Segment is the last segment of a batch HL7 message. It contains the number of individual messages (number of MSH segments) in the batch and an optional comment.
CCR	Clinical Case Registries
DFN	Internal entry number of the patient record in the PATIENT file.
HL7 batch	HL7 batch (or batch HL7 message) is a group of individual HL7 messages surrounded by BHS and BTS segments.
ICN	Integration Control Number.
ICR	Immunology Case Registry
IEN	Internal Entry Number
IENS	A comma-delimited list of internal entry numbers beginning with the lowest level subentry and ending with the top-level entry number.
Local registry	This is the local file of patients that have either passed the selection rules and therefore been added automatically or been added manually by a designated Hepatitis C supervisor.

Log	A record of the ROR LOG file. The record contains messages recorded by a Clinical Case Registries process and some statistical information (number of processed patients, number of errors, etc).
MSH	Message Header is the first segment of an HL7 message. It contains the service information (sending and receiving applications, type of the message, message ID, etc).
National registry	A registry implemented at all VA sites that send the data to the AAC. The sites must not modify the national registry definitions. The definitions and registry software are distributed via patches. Sometimes this term is mentioned in the AAC context (also as National Case Registry). In this case, it refers to the database in Austin that stores the data received from the sites.
Registry coordinator	A person responsible for the clinical support of the registry. The coordinators whose names are referenced by the COORDINATOR multiple of the registry parameters record in the ROR REGISTRY PARAMETERS file receive the VA alerts associated with the registry.
Registry parameters	A set of values controlling the behavior of the software processing the registry data (registry update, data extraction, etc). These values are stored in a record of the ROR REGISTRY PARAMETERS file (#798.1). This record also contains the fields indicating the current state of the registry.
Selection rule	A condition that defines a Hepatitis C patient. See Appendix A of the Clinical Case Registries V. 1.0, Hepatitis C User Manual for selection rules.
SSN	Social Security Number.
User-defined registry	A registry defined by the site personnel and used for local purposes only.
VistA	Veterans Health Information System and Technology Architecture

7. Index